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are capable of symbiosis, there being other unknown limiting factors.—GEO. D. FULLER.

Fertile and sterile strains of Hymenomycetes.—Miss WAKEFIELD²¹ has made a study of the conditions influencing the formation of fruit-bodies of *Schizophyllum commune* and *Stereum purpureum*, which were grown in pure cultures on bread and gelatin or agar media. The most interesting fact brought out by the work is that a disposition or tendency to form fruit-bodies is characteristic of certain strains, while others have a strong tendency to remain sterile. Of thirteen colonies of *Schizophyllum commune* obtained from single spores from various sources, two formed fruit-bodies readily, while the others remained sterile or showed only a slight tendency to fruit. When propagated by the transplanting of bits of mycelium to new nutrient media, the strains maintained their peculiar characteristics with regard to fruiting. *Stereum purpureum* behaved in a similar manner. Although the capacity for fruiting is thus a characteristic predetermined in the spore, the actual production of fruit-bodies is dependent upon certain internal conditions which were studied to some extent. In a moist atmosphere, depressing transpiration, only vegetative growth appears. Absence of light also is said to inhibit the formation of normal fruit-bodies in *Schizophyllum*. Certain other factors appear to act as direct "releasing stimuli." Thus the sudden withdrawal of nutriment leads to the production of fruit-bodies. Even some of the sterile strains show a tendency to fruit under proper conditions of transpiration and nutrition, indicating that the line between sterile and fertile strains may be after all largely a matter of response to environment.—H. HASSELBRING.

Sand dunes of New Zealand.—In preparation for efforts at dune reclamation, COCKAYNE²² has prepared a report upon the sand dunes of New Zealand. They cover an area of over 500 square miles, with a general height of 20–50 feet, but occasionally attaining a maximum height of 300 feet. A general summary of their geological character and history is followed by a consideration of the disturbing effect of man's burning and grazing operations. Many dunes that had long been entirely fixed have thus been revived by advancing civilization. A discussion of the ecological factors involved brings to light the interesting conclusion that the amount of precipitation affects the dune flora very little, areas with an annual rainfall of 100 inches having the same vegetation as others with only 25 inches. A very large number of cloudy and rainy days, however, does modify the xerophytic character of the dune plant associations. The sand-building and sand-collecting plants are

²¹ WAKEFIELD, MISS E., Ueber die Bedingungen der Fruchtkörperbildung, sowie das auftreten fertiler und steriler Stämme bei Hymenomyceten. Naturwiss. Zeitschr. Forst. u. Landwirtsch. 7:521–551. figs. 3. 1909.

²² COCKAYNE, L., Report on the sand dunes of New Zealand. Department of Lands, Wellington, N.Z. pp. 30. pls. 35. 1909.